Peptides, such as BPC-157 and specific collagen types, are emerging in regenerative medicine to potentially treat painful neuromas by reducing nerve inflammation, promoting structural repair, and alleviating symptoms. Neuromas themselves often show increased presence of neuropeptides, including substance P and CGRP, which contribute to pain. [1, 2, 3, 4]

Peptides and Neuroma Management

- **BPC-157:** This regenerative peptide is used to potentially reduce pain, speed healing of damaged nerve tissue, and minimize inflammation associated with nerve injuries like neuromas.
- **Collagen Injections:** Type I porcine collagen injections have shown promise in treating painful Morton's neuromas, with studies indicating significant pain reduction and functional improvement.
- **Mechanism of Action:** Peptides help by activating fibroblasts, which are crucial for repairing tissue and reducing the inflammation that drives chronic neuroma pain. [1, 2, 3, 4]

Peptides in Neuroma Pathology

- **Neuropeptide Accumulation:** Studies of human neuromas, particularly in painful conditions like Morton's neuroma, show increased presence of substance P and CGRP, which are associated with nerve fiber regeneration attempts and increased sensitivity.
- **Nerve Structure:** In neuromas, these peptides are found in disorganized axon bundles and connective tissues, contributing to the nerve growth that characterizes the condition. [1, 2, 3]

Future Directions

- **Self-Assembling Peptides:** Researchers are studying self-assembling peptide hydrogels that can be injected to support nerve repair and reduce the damage caused by nerve injuries.
- **Targeted Treatment:** Advanced peptide therapy aims to provide a targeted, well-tolerated approach to treat neuropathic pain and promote tissue healing. [1, 2, 3]